Impact of the Transportation Industry on the Manufacturing Sector in Alaska

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Introduction

As the state of Alaska continues to struggle with expansion of its economic base from a resource extraction model to a more diversified infrastructure, the relationship between transportation and manufacturing is one that must be examined closely. As a community, it is important that we acknowledge the unique relationship between these two keystones of the economy in our "geographically challenged" state. Equally important is that we openly explore the means by which we can overcome transportation obstacles to encourage manufacturing development.

General Transportation Industry Background

When discussing the overall structure of Alaska's transportation industry, it is necessary to divide the issue into two broad categories: inter-state and intra-state transportation. As discussed below, incoming inter-state transportation relies primarily on the marine system using steamships and barges traveling between Alaska and the contiguous United States. This incoming cargo flow is augmented by ground transportation, primarily trucking provided by independent operators contracting for the delivery of full truckloads, and, for time sensitive deliveries, by airfreight.

Intra-state transportation is conducted largely by light aircraft moving cargo from the rail-belt to remote communities and along the rail-belt by railroad as well as a moderate ground transportation system. Southeast Alaska is, of course, served primarily by the marine highway system, supported by road, and air transportation providers.

Transportation is key to all Alaska activities. Practically everything we wear, eat, and use is brought into the state via some form of commercial transportation (1). While this may seem a straightforward statement, the means by which this importation of goods occurs is worthy of consideration. The vast majority of the goods brought into Alaska arrive via steamship, and there are only four steamships that serve the entire state. While additional cargo does arrive via barge, aircraft and independent container trucks (8), the lifeblood of our economy passes through the hands of the two steamship operators in Alaska: Sea-Land and Totem Ocean Trailer Express (TOTE).

As these steamships travel principally between Anchorage and Seattle/Tacoma the Anchorage International Airport acts as a hub for the major air freight carriers operating in the state. Nearly all of Alaska's consumer freight enters the state through Anchorage and is distributed from there. An Alaska Census of Transportation [Institute of Social and Economic Research (ISER), 1982] provides a good overview of intra-state transportation:

> "The relatively well-populated rail-belt area, served by the Alaska Railroad and the state highway system, and a few other small urban areas, primarily in the Southeast, enjoy a variety of competing transportation

modes and services. Some of these areas also benefit from the economies of scale realized in handling large volumes of passengers and cargo.

Most of the remaining areas, however, scattered throughout the state, have climates and rugged topography, which make difficult the effective use of modern transport technology. The long, severe winters close marine transportation routes to many remote areas, so affected residents must use this mode of transport only in the summer months to bring in their yearly supplies. This is particularly important for petroleum products and construction goods, both of which have high initial costs and thus, high inventory charges. Residents of these outlying areas primarily depend on expensive air transport for passenger transportation and the shipment of most consumer goods."

General Manufacturing Industry Background

Within this transportation environment, many Alaskan entrepreneurs have endeavored to develop manufacturing concerns with notably little success. In fact, a 1997 report from ISER (12) examines the structure of Alaska's economy through a study of the 12 "BASIC" activities that contribute to the economy. BASIC activities are defined as those "which produce a good or service that brings new money into the regional economy from outside the region (12)." Manufacturing is not considered to be a BASIC industry in Alaska's economy.

While "value-added manufacturing" has been a buzz word around the state for the past decade, the report goes on to say that: "With the exception of the seafood industry, where processing provides about the same number of jobs as harvesting, extraction is the dominant source of employment in the commodity-producing industries. This pattern has changed little since statehood." In fact, the lack of manufacturing development in our state is an economic reality of which most Alaskans are aware. We must ask ourselves then, how has the development of this manufacturing sector been supported or inhibited by the transportation sector?

The Transportation Industry's Impact on the Manufacturing Sector

The transportation industry is integral to the success of any manufacturing company. The fundamentals of manufacturing are that the business a) accumulates components and b) fabricates/combines component pieces into an end product that is distributed to a customer base. For both incoming raw materials and outgoing finished products, transportation is an issue. The sheer logistics of managing timing, inventory cost control, and customer satisfaction is probably the first and most obvious internal impact to manufacturers.

The logistics problem is exacerbated in Alaska where rail and road service is limited and distances between any two given population bases may be huge. Manufacturer's must plan well in advance, often maintain inventory at higher levels than competitors in other regions and employ additional personnel to handle transportation flow. All of these logistical issues will negatively impact the company's ability to compete. And, should an order or two be delayed, it may cost the company business.

In today's market, the ability of a manufacturer to deliver product in good condition and in a timely fashion is critical to that company's success. With "just in time" inventory management, the rapid growth in e-commerce (19) and the prevalence of next-day delivery services, market expectations have changed in recent years. Customers today have little tolerance for delays in delivery (13). Alaska, by its very placement on the map, has specific hurdles to overcome when considering the competitive nature of timing. Of course, there is some international advantage to Alaska's geographic placement, and several specific industries intend to leverage that advantage — still, the majority of the developing manufacturing companies in our state look to the domestic market as the principal customer for their products. For those few who are successful, transportation capacity also is an issue.

Capacity tends to be a concern primarily for intra-state commerce however. Specifically, the limited availability of less than truckload (LTL) ground transportation presents barriers to manufacturers who supply or obtain raw material in the local market. The nature of Alaska's population distribution does not support a well-rounded transportation infrastructure. This is very different from the total domestic market where in 1993, "30 percent of the value and 56 percent of the weight of all shipments were moved between locations less than 50 miles apart. More than 39 percent of the value and two-thirds of the weight — 6.4 trillion tons — were shipped less than 100 miles (14)." The lack of infrastructure is, of course, only multiplied for remote communities.

For off-road system communities, capacity, logistics, and cost factors are even more dramatic and personal. With many communities inaccessible for days during the harsh winter months, transportation is inconsistent and expensive. While the advent of air transportation in the early part of this century was a lifeline to village communities of Alaska, the infrastructure that has been built does not seem to be convertible to a structure that supports manufacturing development. Only in one area do Alaska's remote communities have a transportation advantage over the rail-belt. In these communities, back-haul freight rates are discounted from the rate for incoming freight. The same does not hold true for inter-state shipping.

Incoming freight rates in Alaska, both inter- and intra-state, must pay for two-way transportation. When rates for outgoing goods do not reflect the back-haul savings, the manufacturer must pay double freight for incoming components and double freight for outgoing final product — with small (tailored) industry exceptions, it is virtually

impossible to compete with any national or international market with such a distinct competitive disadvantage.

Where in any other area, development of manufacturing drives expansion and competition in transportation, in Alaska, prohibitive transportation structures constrict the growth of manufacturing. What should be a symbiotic relationship is not. In fact, we might even go so far as to say that the transportation industry's lack of vision regarding manufacturing creates a vacuum which the manufacturing sector cannot fiscally escape (9), (10).

In an interview with a local freight consolidator, our team was advised that freight rates have caused many fledgling manufacturers to fold (8). While it is always hard to pinpoint a single cause for business failure, the difficulty of overcoming high transportation costs in Alaska is born out by the experience of our first case study manufacturer.

Case Study #1 — Fairbanks wood products manufacturer (Company identity withheld)

Product: Furniture
Raw material: Fire killed black spruce.
Problem: Transporting assembled furniture from Fairbanks to locations beyond the road system in Alaska, including outside Alaska.

This manufacturer produces fairly heavy, well-constructed furniture from fire killed black spruce, which is collected from state lands near Fairbanks. The supply of raw materials is readily available and utilizes a natural resource that would otherwise be waste. The shop is fully equipped and in 1997 was expanded to accommodate production of the furniture. The staff is well trained and produces a quality product.

After expanding the shop and training personnel, management discovered there was little available margin for transportation costs. While the product is being successfully marketed in two furniture outlets (one in Fairbanks and one in Anchorage), the company has been unable to negotiate freight rates competitive enough to allow sales outside the rail-belt.

The product line includes lounge chairs, rocking chairs, table chairs, end tables, coffee tables, dining tables, coat racks, and magazine stands. These items are designed to compete with quality products in the home furnishings market. All pieces are fully assembled in the shop and the owner does not feel they can produce unassembled units as the integrity of construction would be compromised. As a result, the size and weight of the units makes commercial transportation shipping costs prohibitive. The company explored shipping with the Alaska Railroad and local trucking companies, but could not negotiate a rate that kept total costs within the competitive range.

Management was also unsuccessful in identifying another Fairbanks manufacturer to share shipping containers to reduce costs. This was primarily due to the fact that: 1) the assembled furniture is bulky and requires careful packing, and 2) there are not many manufacturers in Fairbanks shipping products outside the area.

Though potential for sales outside Alaska was demonstrated in a market analysis report produced in 1996, until the company can ship the products economically, all marketing efforts to points beyond Fairbanks and the Alaska road system have been postponed. Unable to incorporate the cost of shipping into its pricing structure, this company has downsized its manufacturing efforts. The rate of production does not allow utilization of economies of scale resulting in marginal profits, and the company has turned to local custom work as a cottage industry.

The experience of this manufacturer appears to be a fairly common one. Still, when we asked Peter Eden of Alaska Wild Berry products (a successful local manufacturer) if he felt the cost of freight would be a deciding factor in the success or failure of a manufacturing concern, he initially resisted the idea. Further discussion however pointed out the impact of transportation on Mr. Eden's business.

Case Study #2 — Alaska Wild Berry Products

Products: Jams, jellies, chocolates, gourmet food products
Raw materials: Chocolate, produce
Problems: Logistics, freight rates

Alaska Wild Berry Products has been in business since 1946. The company has a diversified product line and a national customer base. Owner Peter Eden considers the company to be extremely fortunate to have negotiated an incentive rate for transportation of product out of the state based on volume shipments. This negotiated discount is not considered standard to the market and may, in fact, be eliminated in coming months. In that case, the manufacturer will need to internally cover the cost of second day air in order to remain competitive. While there is some marketing advantage to the "Made in Alaska" cachet, this advantage does not support any significant price differential in the national market.

Mr. Eden confirmed the novelty of Alaskan goods does not matter to customers when it comes to price. If he passed the cost onto the customer he would not be competitive and thinks customers would say, "that's outrageous," and place their orders elsewhere. Unless and until we can get our products to the national market at rates at least comparable to the cost of shipping across the contiguous United States, Alaska's manufacturers will not be able to compete domestically.

It is important to understand that, while tons of freight are shipped to Alaska inbound, cargo carriers travel southbound with virtually empty containers. The cost of freight

coming in to Alaska must then cover the cost of the vessel travelling both ways. Given that the transportation cost is addressed by the price of incoming freight, it would seem to be a reasonable expectation that outbound freight would cost considerably less. Surprisingly, our research indicates that there is no standard discount for outbound freight. Due to a lack of competition, freight carriers have no incentive to develop a dual tiered price structure.

Mr. Eden estimates that Alaska Wild Berry Products spends approximately $100,000 per year on outbound shipments and perhaps $77,000 per year in-bound. Volume is the reverse, in that the company ships in approximately four times as much raw material as it ships out to its national customers. This price differential is largely due to the method of shipping based on the necessity of reaching the market in a timely fashion (the need for air freight).

As to our original question, regarding the cost of freight as a deciding factor in the success or failure of a manufacturing concern, Mr. Eden did state that it was not because of transportation issues that businesses failed. When we asked him if the company would still be in business without its negotiated discount he acknowledged that the cost of freight “would make a difference, especially if the company weren’t diversified." He also stressed that his business needs skilled transportation specialists for internal management of transportation resources.

Timing is a significant issue in transportation and inventory management. Where in the lower 48 states, if you miss a shipment your inventory may be delayed by a day or so, in Alaska, if you miss the boat, your delivery could be postponed by a full week or more. Mr. Eden stressed that management of transportation logistics is a very complicated process and a lot of hard work. Knowing how best to leverage your transportation costs, balancing who/what/how/where/when and how much, is a skill that may take years to develop.

In the case of Alaska Seafood International, these questions of transportation and logistics are the very foundation of the company’s business strategy.

Case Study #3 — Alaska Seafood International

Product: Pre-cooked, ready to heat meals
Raw material: Seafood, produce, seasonings
Problem: Transportation capacity

An interview with founder Howard Benedict indicates that Alaska Seafood International (ASI) has three major cost centers to consider in the development of its manufacturing business: a) labor, b) raw material, and c) transportation. With transportation being a critical component of success, the company is founded in the belief that Alaska has the capacity to grow to meet ASI’s transportation demands.

ASI is, however, in a unique position in Alaska. With a planned shipping requirement of 100 million pounds per year of frozen product and 25 million pounds per year of fresh seafood product, ASI anticipates its manufacturing activity will drive transportation growth. This is in line with the traditional relationship between transportation and manufacturing. Historically, the manufacturing sector is a driving force in the growth of transportation infrastructure. This model holds true for the contiguous United States but has not, to date, applied in Alaska. In the 49th state, consumption rather than production has provided the market for transportation. ASI expects that the cargo volume it will produce at full ramp-up will begin to change that.

As discussed above, the current structure of Alaska's transportation involves heavy shipment of northbound/incoming freight with no corresponding return freight to offset transportation costs. ASI intends to take advantage of this space availability on southbound freighters and fully expects that the volume to be shipped will drive negotiated discount prices for those shipments. The company projects that this outgoing freight will balance the flow of materials to such an extent that within the next four to six years the Alaska market will begin to attract transportation competition from large multi-national freight companies.

Additionally, intra-state transportation development will be driven by the need to bring raw material from the fishing grounds to the manufacturing facility in Anchorage. Surprisingly, Mr. Benedict felt that local transportation issues are of much more concern than inter-state transportation. Specifically, ASI anticipates the cost of bringing fresh product in from coastal communities will be excessive, though the company is hopeful raw material providers will develop a strategy to deliver product to the manufacturer competitively. Additionally, there is some concern regarding the ability of the transportation industry to identify, hire, and train a workforce with the skills necessary to handle the company's product. Finally, the ability of the ground transportation industry to support ASI's shipments from the plant to the port and/or airport is a considerable issue for the company.

Amazingly, a review of the Alaska Railroad Feasibility study for development of a train depot at the Anchorage International Airport contains no mention whatsoever of freight or cargo capacity. Negotiations to extend a spur from the railroad to ASI's location only a few miles from the airport have been drawn out and there is, as yet, no assurance that this transportation capability will be available to the company. Currently, the company plans to transport product to the Anchorage International Airport via truck, likely straining the ground transportation sector in Anchorage.

While it will be interesting to see how ASI drives development of a transportation infrastructure to support its manufacturing efforts, the experience of this large manufacturer will have little bearing on the issues facing manufacturers in remote areas of the state.

Case Study #4 — Nomad Shelters, Inc.

Product: Yurts or Gers, portable structures ready for assembly to be used as a temporary
shelter and specifically designed to withstand harsh climates.
Problem: Transportation cost of raw materials into Nome.

Nomad Shelters, Inc. (NSI) has been supplying yurts to the Alaska market on a limited basis for the past 10 years. In 1997, owners Jessica and Lee Tenhoff did a time and cost study for production of yurts in Nome. While the profit margin for each yurt was minimal, it was determined that this was mainly due to the cost of shipping raw materials to Nome. From this study, it was projected that the cost of production could be reduced with the outsourcing of components to sub-contractors on the Alaska road system.

The company has been researching and attempting to implement a manufacturing process where the wood components are produced by a mill/finisher on the road system, and the covers are produced in Nome. All components would be shipped to a consolidator in Anchorage that would perform some quality control and prepare the product for shipping to the customer.

NSI has most likely targeted the only true solution to manufacturing from remote communities in Alaska. An interview with a representative of the recently reorganized State of Alaska Department of Community and Economic Development indicates the transportation issues in villages accessible only be air or barge would be extremely difficult to overcome for anyone hoping to develop a manufacturing base.

Shipments into and out of Nome are via barge or air. Barge shipments are limited to the summer months and necessitate long lead times. For a new manufacturing company, the barge option, although cost efficient, is not a reasonable option for most products. Airfreight into Nome is an expensive alternative; although unlike inter-state freight, back-haul air-freight rates for intra-state transportation are discounted (rates are estimated per pound at $.08 back-haul Nome to Anchorage, and $0.47 Anchorage to Nome). Additionally, in smaller communities there are often no scheduled flights and, where there are scheduled flights, weather often prohibits landing. These communities therefore lack access to the consistency and frequency of transportation required by the manufacturing industry. Overall, the high cost, unreliable service, and cultural reality of much of remote Alaska indicates manufacturing development for these communities will be limited.

Highlights of Transportation Industry Impact on Manufacturing

Our review of the impact of transportation on manufacturing can be summarized as follows:

- The ability to deliver price competitive products in good condition and in a timely fashion is critical to manufacturing success. Alaska's manufacturers must compete directly with companies in the contiguous United States — no allowance will be made in the market for transportation challenges faced by Alaskan companies.
- Logistics issues are exacerbated in Alaska where road and rail service is limited — in-house logistics specialists are a must for Alaska's manufacturers.
- Limited availability of less than truckload (LTL) ground transportation presents barriers to manufacturers who supply or obtain raw material in the local market.
- Off-road communities face additional challenges of capacity, logistics, and cost that suggest manufacturing in these communities should utilize indigenous natural resources as raw material so that the benefit of intra-state back-haul rates may be realized.
- When inter-state rates for outgoing goods do not reflect back-haul savings, the manufacturer must pay double freight for incoming components, as well as double freight for outgoing final product.
- The symbiotic nature of the relationship between manufacturing and transportation throughout the lower 48 states does not exist in Alaska. Where these two industries ought to support and nurture one another to their mutual benefit, the size disparity between the industries has resulted in the stagnation of manufacturing development in the state.

Transportation Trends

All of the research conducted in the course of this project indicates growth and expansion will be the norm for the transportation industry in Alaska in the next few years. This will be a continuation of the trend experienced by this industry through the 1990's, when the industry's employment values grew at a rate 10 percent faster than overall employment in the state (15). Additionally, the expansion of this industry continues to be a focus of economic development activities state-wide (16). Specific examples of planned expansion provide insight into the type of industry growth we may expect:

- The Matanuska Susitna Valley Borough has invested considerable resources in the development of an inter-modal transportation expansion plan (2). This comprehensive strategy for growth provides access to both ground and water transportation modes in an environment designed to support a blend of industrial and passenger activity. Concept drawings for this plan are available and implementation strategy is under development.

- The Anchorage International Airport (AIA) Expansion Plan also provides a comprehensive strategy for growth (7). Even the most pessimistic of scenarios in the AIA Master Plan Update indicates the need for additional infrastructure development. These projections are supported by the Anchorage Economic Development Corporation's (AEDC) projections for growth in the air cargo industry. AEDC anticipates that by year's end "growth in air transportation industry will likely expand TCU (Transportation, Communications and Utilities) by 3.2% for a total of 430 new jobs in the Anchorage economy."

  The airport continues to work to expand its capabilities for international cargo handling, as well as passenger travel. Presentations recently at the Top of the World Cargo Summit on international global logistics indicated that Anchorage has an opportunity to establish a presence in this highly competitive market. Speakers at the conference emphasized however that the window of opportunity is narrow. Anchorage must move quickly if it hopes to remain a player in the international transportation market (17).

- The Southeast Transportation Plan demonstrates the state's continuing commitment to development of Alaska's marine highways as well (3, 18). The plan combines a series of transportation approaches to develop a well connected transportation model using modern technology, a blend of small and large vessels, as well as creative combinations of ground, water, and air transportation to ensure timely transportation options to the communities of Southeast Alaska.

- Finally, the Alaska Railroad also has plans to expand and improve its infrastructure with the upcoming purchase of four new 4,000 horsepower locomotives. The state-owned railroad also intends to invest in significant track improvements; straightening tracks between Anchorage and Wasilla to reduce travel time between those cities by half (4).

The question of the hour is: Will all of this projected growth and development in the transportation industry begin to effect change in the development of manufacturing in our state? Unfortunately, unless and until there is some incentive for the transportation industry to work with manufacturers to the benefit of both industries, no change in the environment for emerging manufacturers will occur. Increased capacity will only positively impact continued economic diversification if it eventually results in competitive transportation availability. In short, none of the expansion described above directly addresses the transportation issues facing Alaska's manufacturers today.

Conclusions

In order for the Alaska manufacturing sector to grow, the economic development community and industry leaders must work to ensure the transportation industry acknowledges the needs of manufacturing in its own strategic planning process. These

groups must bring these two key players to the table to explore mutual opportunities and leverage industry investment in regulatory improvements, community marketing, and infrastructure and workforce development.

An example of successful partnering between transportation and manufacturing can be found in the model created by the Alliance Regional Development group located just north of Dallas/Ft. Worth, Texas. The transportation hub was built in 1988 as a cooperative effort between private industry and city, state, and federal governments. It has surpassed all expectations for growth. Attracting national attention in recent years, this regional business center has created more than 12,100 full-time permanent jobs, generated $3.6 billion in new private investments for the region, and grown to more than 13.5 million square feet of space (21). Embracing a truly global outlook, the Alliance attracts industry with a series of business incentives including a foreign trade zone, a "user-fee" airport, an on-site customs office, a freeport tax exemption, an enterprise zone, and a world-trade center. A wildly successful concept, the Alliance demonstrates the type of thinking that will be necessary for Alaska if we are to become a player in the international marketplace in the 21st century.

In order to bring these two diverse groups together, it will be necessary to involve some entity or agency to act as the catalyst for cooperative development. In Alaska, the logical choice for this role is the local Manufacturing Extension Partnership (MEP). The MEP is a network of not-for-profit centers in over 400 locations nationwide, whose sole purpose is to provide small and medium-sized manufacturers with the help they need to succeed. The MEP program is funded in part and coordinated by the U.S. Department of Commerce's National Institute of Standards and Technology. With a series of contractors around the country serving the MEP role in each of the 50 states [the Alaska contract is currently held by Industry Network Corporation (Inc.)], the MEP network has access to the expertise of knowledgeable manufacturing and business specialists all over the U.S.

Developing partnerships is a cornerstone of the MEP program and the network has extensive experience in bringing manufacturers together with both public and private entities to promote the regional growth of manufacturing. The creating of an industry consortium designed to benefit manufacturing development through relationship building with transportation would be an ideal task for the Alaska MEP as it strives to fulfill its mission in the 49th state.

Whatever the vehicle, a dual industry consortium should be open-minded and creative in addressing the issues that challenge the Alaska economy. For example, in order to encourage investment from the mature transportation industry in the fledgling manufacturing sector, a consortium might encourage the state to develop some type of tax incentive program for transportation carriers willing to discount rates to emerging manufacturing firms. On a declining scale, this type of program could provide manufacturers with the edge they need to develop volume markets necessary to reach

economies of scale and competitive manufacturing levels. Based upon the willingness of participants, the range of topics for discussion might range from this type of economic infrastructure to specific project development.

For example, one clear area of interest to both parties is the development of international cargo trans-loading capability, a project recently under discussion for the Anchorage International Airport (17). This project specifically refers to the construction of a 600,000 square foot trans-loading facility. Designed to exploit the recent relaxing of regulatory requirements for co-mingling of cargo traffic among foreign and domestic carriers, capacity created by this type of facility may be considered a key factor in positioning AIA in the global market (11).

Or the consortium might consider supporting the development of a rail route through Canada and Alaska as recently proposed by Senator Frank Murkowski (28). This is an idea that came up in several industry interviews as one that would truly reduce the cost of freight into and out of the state.

Another focus for a manufacturing/transportation consortium might be the promotion of Foreign Trade Zones in the state. The Anchorage Economic Development Corporation has been actively promoting the Foreign Trade Zone (FTZ) status of several sub-zones around the Anchorage International Airport for several years with limited success. The FTZ designation provides an advantage for businesses seeking to: store or stage cargo, repackage or relabel cargo, repair merchandise, and assemble or test products (24). Combined with Alaska's geographic relationship to the Asian and European markets, it has long been thought that the FTZ designation would draw corporate activity in one or more of these markets.

For example, United Parcel Service (UPS) and Gateway Computers have a relationship that is particularly appropriate to take advantage of an FTZ designation. In this model, Gateway contracts with UPS to ship and service their computers. When a Gateway computer owner has a problem, the call for service is directed to UPS. UPS picks up the computer in need of service and ships it to the UPS hub, which houses a service center. UPS employees perform the diagnostics and repair then ship the computer back to the customer. Gateway is completely out of the circuit when it comes to repair and service of its computers and can concentrate on development and sales. UPS maintains a 24 hour workforce to ensure an expedient turn-around with most of the computers being picked up, serviced, and returned within 30 hours. Unfortunately, to date there has been very little of this type of activity in Alaska, largely due to a concern about workforce structure and availability in the state.

The transportation industry is one with a high degree of labor organization, particularly in the marine transportation sector. This can lead to highly restrictive work rules and increased labor costs. The recent experience in Hawaii where the threat of a strike by the International Longshore and Warehouse Union Local sent residents running to the

store to stock up on household staples, contains a lesson for Alaska. Those concerned must closely consider the impact of one select group of individuals on the state's lifestyle and weigh the risk associated with a concentration of power in any one area (23). In fact, several of the manufacturers interviewed for this study stressed the need for labor to be involved in any consortium effort to improve transportation costs for manufacturers. The more direct concern however, was tied to overall workforce availability.

With the Alaska Department of Labor projecting growth of up to 50 percent in a variety of industry occupations (15), it is critical that the transportation industry plan for growth by recruiting young people to the industry. Transportation is a field with a potentially negative perception on the part of students entering high-schools today. This is not necessarily due to the realities of transportation, it seems that in today's world, any "hands-on" field of work has a negative perception. Most young people are now motivated by the promise of high-tech home runs, the "Microsoft Millionaire" version of the career lifecycle is a prime motivator. Additionally, the aging of the "Baby Boomers" has resulted in a population lull that leaves the U.S. with fewer young people to step into employment positions —competition for trainees will only get more fierce between industries in coming years.

Addressing an industry training consortium in California, U.S. Secretary of Transportation Rodney Slater recently proclaimed, "Transportation is about more than concrete, asphalt and steel — it's about investing in people and providing the opportunities to pursue better lives (25)." While those in the industry understand the wide range of opportunities in the field, this information must be conveyed to potential transportation employees. Having attracted applicant trainees, it is equally important to ensure the structure is in place to train appropriately to the industries' needs.

A current funding opportunity for training consortium development through the U.S. Department of Labor indicates that analysis is an important step in the development of a training plan. It is important to "assess the skills possessed by regional workers and develop strategies for making sure those skills are aligned with the requirements for filling the job vacancies that exist in regional industries (26)." These requirements appear to be in a state of flux for the transportation industry.

In a presentation on marine transportation needs for example, Mr. Jon Helmick, Director of Logistics and Intermodal Transportation Program at the U.S. Merchant Marine Academy stated that:

> ". . .the human resource element of the transportation system equation must be addressed. The need for qualified decision makers and technical operators with expanded knowledge and skills is acute. While institutions engaged in maritime education and training have been primarily concerned with developing in their students the knowledge and skills necessary to safely and efficiently conduct waterborne transportation from port to port, an understanding of the

> relationships between maritime and other modes, and a working knowledge of the larger transportatoin system, are now also necessary components of maritime education (27)."

In order to be effective then, it will be critical that training entities bear in mind the changing nature of industry requirements.

A review of the transportation-training infrastructure in the state indicates that several key training areas are currently being addressed in the market by both public and private entities. Specifically, flight schools, commercial drivers training, nautical schools, and mechanical training are presently available in Alaska. The recent introduction of a logistics program at the University of Alaska at Anchorage campus also indicates that the state is acknowledging the need for quality training in this industry sector. Classroom instruction alone however will not meet the industry's needs.

Many of the occupations identified as having high growth potential are those that require work experience in addition to any pre-employment training. Supervisors and managers in trades ranging from mechanical to logistics to general business fields will be required. The lead-time then on training for these positions may often be measured in years, indicating that the time to plan and train for that growth is now. Alaska's manufacturers and potential manufacturers will have a vested interest in successful transportation industry training at all levels.

Aside from direct employment requirements of transportation professionals in manufacturing facilities, it is important to understand how a work shortage at a critical phase of transportation development might impact manufacturing. Imagine a scenario in which a multi-industry consortium is successful in promoting the growth of manufacturing in the state over the next five years. Newly developed manufacturing operations will be the transportation customers with the shortest commercial transportation relationships providing the narrowest profit margins to the carriers. Any shortage in workforce will result in the severing of those relationships, as any industry must dedicate its capacity first to those long standing customers whose business provides the most stable revenue stream. In other words, a failure of the transportation / manufacturing industry consortium to address workforce needs would be an oversight on the part of that cooperative effort.

The manufacturing sector will be more directly impacted by shortages in several occupations projected to be in high demand. As previously stated, logistics specialists are particularly important employees in successful manufacturing firms. Skilled consolidators might make the difference between the success and failure of a remote manufacturing enterprise, forklift drivers and truckers play an important role in the day to day operations of any manufacturing company, the list will go on. What is most important is that, again, these two industries come together to address mutual needs and concerns, to the benefit of all involved.

Summary Recommendations

Upon consideration then of the relationship between manufacturing and transportation, we find that investment by the transportation industry in the development of a viable manufacturing sector will benefit both industries and, as a result, the overall economic health of the state. Recommendations for a plan of action to encourage this type of industry investment in industry may be summarized as follows:

- Development of a multi-industry consortium to address areas of mutual opportunity and concern and address the long-term impact of relationship development between transportation and manufacturing.
- Investment in the continuing growth of all modes of competitive transportation capacity.
- Promotion of an increased understanding of the symbiotic relationship between these two industries and the necessity for timing industry growth appropriately to support each industry.
- Consideration of the local Manufacturing Enterprise Partnership program to act as a catalyst in formation of this consortium.
- Consideration of incentive programs to promote the availability of cost-effective transportation for Alaska's manufacturers.
- Promotion of existing Foreign Trade Zones and continued development of economic incentive programs.
- Careful planning of transportation infrastructure expansion including workforce development addressing both availability and cost of skilled labor.

Citations

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2: *Appendix A: Mat-Su Borough Intermodal Transportation Plan Statement of Services*

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